DOCUMENT RESUME

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ABSTRACT

This assessment sample provides information on the Missouri Assessment Program (MAP) for grade 10 mathematics. The sample consists of three items taken from the test booklet and scoring guides for the three items. The items assess geometric/spatial sense and measurement, patterns and relationships, and number sense. (MM)

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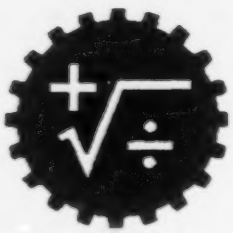
RELEASED ITEMS

Missouri Assessment Program (MAP)
High School Mathematics
Spring 2000
Grade 10



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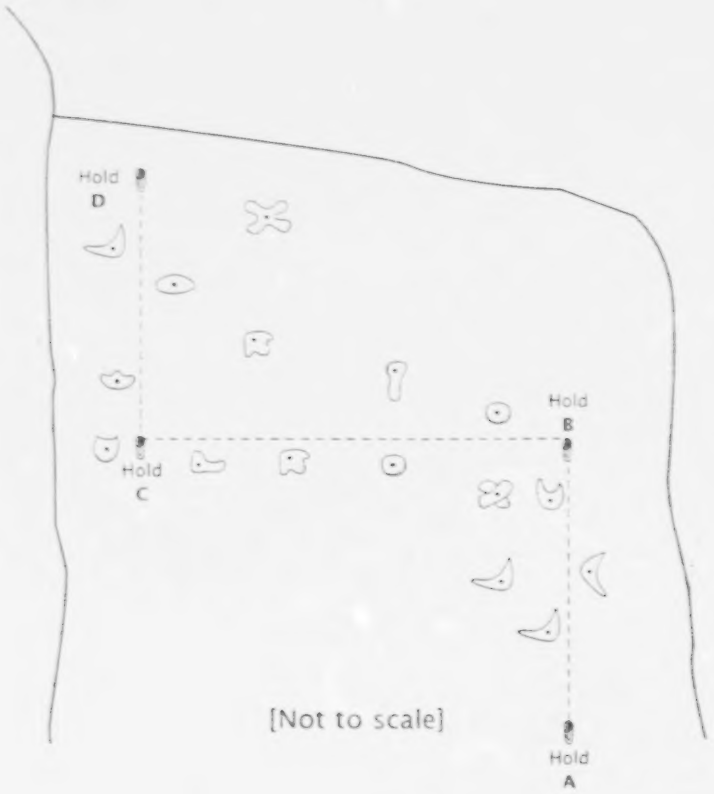
GRADE 10

FROM TEST BOOKLET

Session 1-Items 6 and 8

Session 2-Item 3

6 Four holds on one of the rock climbing walls are labeled on the diagram below. Matthew first climbs vertically 10 feet from Hold A to Hold B, horizontally 25 feet from Hold B to Hold C, and then vertically 15 feet from Hold C to Hold D.

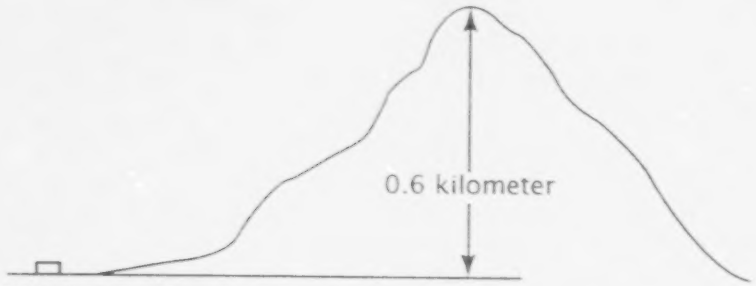


How many ***fewer*** feet would Matthew have climbed if he had climbed directly from Hold A to Hold D? Provide the work that shows how you arrived at your answer.

Go On

8 At a weather station at the base of Taum Sauk Mountain, you measure an air temperature of 25°C. Air temperature decreases about 6.5°C for every one-kilometer increase in altitude. Write an equation that represents the temperature (T) in degrees at an altitude of (y) kilometers.

The approximate height of Taum Sauk Mountain is shown below. Find the temperature at the peak. Provide the work that shows how you arrived at your answer.



Weather Station
Air temperature = 25°C

Go On

3 Gail must take one photograph of each of 90 rings for a jewelry store. Color print film is sold in two different-sized rolls at the prices shown in the table.

COLOR PRINT FILM PRICES

Number of Exposures	Price per Roll
24	$2.88
36	$3.24

How many of each size roll of film should Gail purchase in order to have enough film at the lowest total cost? Provide the work that shows how you arrived at your answer.

Go On

GRADE 10

SCORING GUIDES

Session 1-Items 6 and 8

Session 2-Item 3

Session: 1
Item No.: 6
Page No.: 7
Content Standard(s): 2 Geometric/Spatial Sense and Measurement
Process Standard(s): 1.4

Exemplary Response:

- 15 (feet) or 14.6 (feet) or 14.64 (feet)

  OR

  Answer appropriately rounded

AND

- $(AD)^2 = (10 + 15)^2 + 25^2 = 625 + 625 = 1250$
  $AD = \sqrt{1250} \approx 35$
  $10 + 25 + 15 = 50$
  $50 - 35 = 15$

  OR

- $15^2 + 15^2 = c^2$
  $450 = c^2$
  $15\sqrt{2} = c$

  $10^2 + 10^2 = c^2$
  $200 = c^2$
  $10\sqrt{2} = c$

  $15\sqrt{2} + 10\sqrt{2} = 25\sqrt{2} \approx 35.3553$
  $50 - 35.3553 = 14.6447 \approx 14.64$

  OR

  Other valid process

Session: 1
Item No.: 6
Page No.: 7
Content Standard(s): 2 Geometric/Spatial Sense and Measurement
Process Standard(s): 1.4

Exemplary Response:

- 15 (feet) or 14.6 (feet) or 14.64 (feet)

  OR

  Answer appropriately rounded

AND

- $(AD)^2 = (10 + 15)^2 + 25^2 = 625 + 625 = 1250$
  $AD = \sqrt{1250} \approx 35$
  $10 + 25 + 15 = 50$
  $50 - 35 = 15$

  OR

- $15^2 + 15^2 = c^2$
  $450 = c^2$
  $15\sqrt{2} = c$

  $10^2 + 10^2 = c^2$
  $200 = c^2$
  $10\sqrt{2} = c$

  $15\sqrt{2} + 10\sqrt{2} = 25\sqrt{2} \approx 35.3553$
  $50 - 35.3553 = 14.6447 \approx 14.64$

  OR

  Other valid process

Session: 1
Item No.: 8
Page No.: 9
Content Standard(s): 4 Patterns and Relationships
Process Standard(s): 1.6

Exemplary Response:

- $T = 25 - 6.5y$

AND

- 21(°C)

  OR

  21.1(°C)

AND

- $25 - (6.5 \times 0.6)$
  $25 - 3.9 = 21.1$

  OR

  Other valid process

Score Points:

3 points	Exemplary Response (three components)
2 points	Two components
	OR
	Correctly solves incorrect equation
1 point	One component
0 points	Other

Session: 2
Item No.: 3
Page No.: 7
Content Standard(s): 1 Number Sense
Process Standard(s): 3.3

Exemplary Response:

- 2 rolls of 36 and 1 roll of 24

AND

- $90 \div 24 = 3.75$ or 4 rolls
  $4 \times 2.88 = (\$)11.52$

  $90 \div 36 = 2.5$ or 3 rolls
  $3 \times 3.24 = (\$)9.72$

  $(2 \times 3.24) + (1 \times 2.88) = (\$)9.36$
  \$9.36 is lowest cost

  OR

  Other valid process

Score Points:

2 points	Exemplary Response
1 point	Correct process; error in computation OR Correct answer
0 points	Other